

CLAIMS

1. A vaccine suitable for enhancing T-cell dependent immunity comprising a T-cell dependant antigen, or part thereof, and an associated adjuvant which is adapted to stimulate a T-cell lymphocyte via the cell surface receptor CD28.

2. A vaccine according to Claim 1 wherein said antigen is a soluble antigen.

3. A vaccine according to Claim 1 or 2 wherein said antigen is a protein.

4. A vaccine according to Claims 1-3 wherein at least a part of said adjuvant is adapted to bind to CD28, or a part thereof.

5. A vaccine according to Claims 1-4 wherein said antigen and said adjuvant are cross-linked theretogether.

6. A vaccine according to Claims 1-4 wherein said vaccine is composed of said antigen and said adjuvant which are not physically co-joined.

7. A vaccine according to Claims 1-6 wherein said adjuvant is an antibody, or an effective part thereof, which is adapted to bind to said CD28.

8. A vaccine according to Claim 7 wherein said antibody is monoclonal.

9. A vaccine according to Claim 8 wherein said antibody is a humanised monoclonal antibody.

Sub A3
10. A vaccine according to Claims 1-9 wherein said adjuvant is based on the natural ligands of CD28, or B7.1 or B7.2, or an active binding fragment thereof.

11. A vaccine according to Claims 1-10 wherein said adjuvant is recombiantly manufactured.

Sub A4
12. A vaccine according to Claim 11 wherein said antigen and said adjuvant comprise a recombinant fusion protein.

13. A vaccine according to Claims 1-12 wherein said vaccine comprises an immunostimulating composition adapted to elicit an enhanced cytotoxic T-cell response.

14. A vaccine according to Claims 1-13 wherein said vaccine comprises, liposomes, biodegradable microspheres or an emulsion of antigen and adjuvant in oil.

Sub A5
15. An adjuvant for enhancing an immune response to a soluble protein wherein said adjuvant comprise an agent adapted to stimulate a T-cell lymphocyte surface receptor CD28.

16. An adjuvant according to Claim 15 wherein said adjuvant is adapted to bind to at least a part of said CD28.

17. An adjuvant according to Claims 15 or 16 wherein said adjuvant is an antibody, or a part thereof.

18. An adjuvant according to Claim 17 wherein said antibody is monoclonal.

19. An adjuvant according to Claims 18, wherein said adjuvant is a humanised monoclonal antibody.

5 20. A method for the manufacture of a vaccine capable of eliciting a T-cell dependent immune response comprising selecting a suitable T-cell dependant antigen, or part thereof, and combining said antigen with an adjuvant wherein said adjuvant is adapted to stimulate a T-cell specific response by stimulation of a T-cell receptor CD28.

10 21. A method for the manufacture of a vaccine according to Claim 20 wherein said antigen and/or adjuvant is/are recombinantly manufactured and are co-joined to produce a chimeric fusion protein.

22. A method according to Claim 20 or 21 wherein said antigen and adjuvant are cross-linked theretogether.

15 23. A system for use in the production of a vaccine capable of eliciting a T-cell dependent immune response wherein said system comprises a cell expressing a selected T-cell dependant antigen, or part thereof, and also an adjuvant capable of stimulating a T-lymphocyte receptor CD28.

20 24. A system according to Claim 23 wherein said system is adapted so that said cell secretes said antigen and/or said adjuvant and in the instance where both are secreted they are secreted either singularly or as a co-joined fusion protein.

25. An isolated DNA molecule encoding either or both said antigen and/or said adjuvant according to Claims 1-19.

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